

Amendment and Response

Applicant: Steiner et al.

Serial No.: 10/519,215

Filed: September 19, 2005

Docket No.: 431.122.101/FIN399PCT/US

Title: ELECTRONIC COMPONENT WITH A HOUSING PACKAGE

IN THE SPECIFICATION

Please amend the specification as follows:

Page 12, Lines 24-29,

The circuit carrier 26 of this embodiment of the invention has a layer of plastic 3, on the upper side 27 of which the buried interconnect layer is arranged and which is electrically connected by means of contact vias 8 to external contact areas 14 arranged on the underside 28 of the circuit carrier 26. In this first embodiment of the invention, external contact balls 29 of the electronic component 1 are arranged on the external contact areas [[17]] 14.

Page 14, Lines 12-22,

The multichip module may be loaded both with further semiconductor chips 5 and with passive components 16 on its upper side 13, while its underside 12 has external contact areas 14, which may be equipped with external contact balls (not shown). The passive components 16 may be connected both with their electrodes by means of contact vias 8 to the individual buried interconnect layers 34 or 35 and directly to the external contact areas [[8]] 14. Such an electronic component 1 according to the invention is distinguished by the fact that no bonding connections have to be provided and also the contact vias 8 to be provided in the individual layers of plastic 3 can be minimized, especially since the pointed-conical external contacts 7 of the semiconductor chips directly form contact vias 8 through the individual layers of plastic 3.

Page 14, Lines 30-31, Page 15, Lines 1-7,

Figure 3 illustrates a schematic cross section of an electronic component 1 of a third embodiment of the invention, thereby realizing a first hollow housing package 17, which has an extremely flat cavity 36. The housing package 2 of this ~~cavity~~ hollow housing package 17 has essentially two layers of plastic. On the one hand a structured layer of plastic 37, which forms the frame 19 for the cavity housing package, the frame 19 being penetrated by pointed-conical external contacts 7 of the semiconductor chip 5. The semiconductor chip 5 at the same time forms with its upper surfaces the upper side 13 of the electronic component 1.

Amendment and Response

Applicant: Steiner et al.

Serial No.: 10/519,215

Filed: September 19, 2005

Docket No.: 431.122.101/FIN399PCT/US

Title: ELECTRONIC COMPONENT WITH A HOUSING PACKAGE

Page 15, Lines 8-17,

The depression 25 in the structured layer of plastic 37 is covered by a closed layer of plastic in the form of a covering 18, which has similar functions to the circuit carrier 26 in the previous exemplary embodiments, since the covering 18 at the same time carries a buried interconnect layer 4, which is in connection with external contact areas 14 on the covering 18 by means of contact vias 8. Such a cavity hollow housing package 17, as shown in Figure 3, may be used for contact sensors, as are provided in notebooks, computers or cash dispensers, especially since an upper side of the semiconductor chip 5 at the same time forms the upper side 13 of the sensor, while the shielding covering 18 of the cavity 36 has the underside 12 of this cavity hollow housing package.

Page 15, Lines 18-30, Page 16, Lines 1-2,

Figure 4 illustrates a schematic cross section of an electronic component 1 of a fourth embodiment of the invention. This fourth embodiment of the invention differs from the third embodiment of the invention as shown in Figure 3 in that the semiconductor chip 5 is formed as a buried semiconductor chip 10, in that an upper layer of plastic 15 covers the semiconductor chip 5 and at the same time protects it from contact. Such an electronic component with a flat cavity 36 may be used in particular for precision high-frequency filters, the filter structure being arranged on the active upper side 6 of the semiconductor chip 5 and connected by means of the pointed-conical external contacts 7 of the semiconductor chip 5 with contact vias 8 through the covering 18 of the cavity hollow housing package 17 to external contact areas 14 on the underside 12 of the housing package 2. In this fourth embodiment of the invention, the housing package comprises three layers of plastic 3 with a buried interconnect layer 4, while the housing package 2 in the third embodiment of the invention only has two layers of plastic 3 with a buried interconnect layer 4 lying in between.